

REMARKS

Reconsideration of this application, as amended, is respectfully requested.

The present application is directed to claims 1-5 as claims 6-9 were withdrawn from consideration due to a restriction requirement placed earlier by the Examiner, and claims 1-5 were elected in a telephone conversation with the Examiner on May 13, 2003. In the Office Action, the Examiner requires that Applicants affirm the election made during the telephone conversations. Therefore, Applicants provisionally elect to prosecute the subject matter of claims 1-5. However, Applicants reserve the right under 35 U.S.C. §121 to file one or more divisional applications directed to the non-elected claims in this application.

In response to the Notice of Non-Compliance dated September 18, 2003, Applicants have added the text of withdrawn claims 6-9 in the present amendment.

In the Office Action of May 22, 2003, the Examiner objects to the title of the invention because it is not descriptive. In response, Applicants have amended the title to "VIDEO IMAGE CODING APPARATUS WITH INDIVIDUAL COMPRESSION ENCODING SECTIONS FOR DIFFERENT IMAGE DIVISIONS", as suggested by the Examiner. Accordingly, Applicants respectfully request the objection to the title be withdrawn.

The Examiner rejects claims 1-5 under 35 U.S.C. §102(b) as being allegedly anticipated by Japanese Publication No. JP 8-18955 to Shimizu et al. (hereinafter "Shimizu"). In response, independent claim 1 has been amended to clarify its distinguishing features.

The Examiner alleges that Shimizu discloses a device for encoding an image that is the similar to the video image coding apparatus as recited in claims 1-5 of the present application. Specifically, the Examiner states that Shimizu, in Figs. 2, 4 and 9, discloses an image dividing

means 102, a plurality of coding sections 119-126, a multiplexing means 132 and a coordinated coding control means 108-111.

Shimizu discloses, in paragraph 0021, a picture divider 102 that divides a picture inputted from the input terminal 101 into a plurality of picture divisions 103, and inputting these division picture images 103 into division picture coding equipments 104-107 and encoding them. Furthermore, Shimizu, in paragraph 0032, teaches multiplexing the coded data 131 of each division picture by the multiplexing section 132, and outputting the coded data 131 to an output terminal 133. However, Shimizu fails to disclose a coordinated coding control means as recited in independent claim 1 of the present invention.

The present invention, as recited in amended claim 1, recites a coordinated coding control means that receives some or all of coding parameters, image status parameters and coding result parameters which are extracted from a plurality of coding sections, and adjusts the parameters in order to achieve coordinated coding between the coding sections. The adjusted parameters are used for compression encoding by the coding sections in a control period or under a control condition determined in advance.

As shown in Fig. 1 and recited in claims 1-5, the image dividing section 101 divides a video image signal into a predetermined number of image divisions and supplies the image divisions to the coding sections 103, 106 and 109. The coding sections 103, 106 and 109 perform compression encoding of the image divisions in accordance with a predetermined coding method and the resulting codes are supplied to the buffers 104, 107 and 110, respectively. The buffers 104, 107 and 110 supply the codes to the multiplexing section 102.

The in-division coding control section 105, 108 and 111 perform coding control based on the image status parameters, coding status parameters, and coding resulting parameters supplied

thereto to produce appropriate coding control parameters and supply the coding control parameters to the coding sections 103, 106 and 109 and the buffers 104, 107 and 110, respectively. Further, the in-division coding control sections 105, 108 and 111 communicate the parameters supplied thereto from the coding sections 103, 106 and 109 and the buffers 104, 107 and 110 to the coordinated coding control section 112 over the communication bus 113.

The coding sections 103, 106 and 109 execute their coding in accordance with coding control parameters such as quantization parameters supplied thereto from the in-division coding control section sections 105, 108 and 111, respectively. The coding sections 103, 106 and 109 detect or calculate image status parameters such as complexity parameters of the inputted image, code status parameters used for coding such as quantization parameters, coding result parameters of an object of coding such as a generated information amount, and other necessary parameters and supplies the parameters to the in-division coding control section sections 105, 108 and 111, respectively.

The buffers 104, 107 and 110 execute modification by using upper limit amounts permitted for the buffers to use in accordance with the coding control parameters supplied thereto from the in-division coding control section sections 105, 108 and 111, respectively.

The coordinated coding control section 112 has a function of determining basic coding control parameters based on parameters such as a bit rate and an image size, which are supplied from a user, an apparatus controller or the like and determine entire coding operation, and supplying the determined basic coding control parameters to the image dividing section 101, the in-division coding control sections 105, 108 and 111 and the multiplexing section 102. The coordinated coding control section 112 has another function of evaluating coding situations of the individual image divisions with various parameters supplied thereto over the communication

bus 113, calculating coding control parameters such as appropriate information amounts and buffer amount allocations and supplying the calculated coding control parameters over the communication bus 113. Further, it is possible for the coordinated coding control section 112 to have an additional function of supervising the states of all of the buffers supplied thereto from the multiplexing section 102, performing such processing as urgent stopping of coding and reflecting this on the coding control parameters.

Shimizu, on the other hand, fails to disclose a coordinated coding control means as recited in the claims. Shimizu is silent on performing coding control of coding units for individually coding signals after image divisions are produced and supplied in an integrated fashion. The present invention controls parameters, which define operation of the control sections, using a coordinated coding control means that employs coordinated control, as recited in independent claim 1. Additionally, dependent claims 2-5 recite that information amounts or buffer amounts for each coding section is used as a parameter to be supplied or a limitation item to a parameter production method.

Anticipation requires the presence in a single prior art reference, disclosure of each and every element of the claimed invention, arranged as in the claim. Lindeman Maschinenfabrik GMBH v. American Hoist and Derrick Company, 730 F.2d 1452, 1458; 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984). Shimizu fails to teach receiving coding parameters and adjusting the parameters to be used for compression encoding by coding sections in a control period or under a control condition determined in advance, in order to achieve coordinated coding between the coding sections. Therefore, Shimizu fails to anticipate the present invention. Accordingly, Applicants respectfully request that the §102(b) rejection of claims 1-5 be withdrawn, and respectfully request that the claims be allowed.

In view of the above, it is respectfully submitted that this application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicants' attorney would be advantageous to the disposition of this case, the Examiner is requested to telephone the undersigned.

Respectfully submitted,



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